

# **Blue River Greenway Masterplan Study**

## **Swope to Truman Trail Concept Plan**

**Prepared by:**

**HAZMED  
Woolpert, LLP**

**Prepared for:**

**U.S. Army Corps of Engineers, Kansas City District  
Kansas City, MO Public Works**

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# Swope to Truman Trail Concept Plan

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# Blue River Greenway Master Plan

## Swope to Truman Trail

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### Executive Summary

The multipurpose trail from Swope Park to Truman Road is the first component of the overall Blue River greenway corridor to be developed. The trail consists of an eleven mile paved pedestrian and bicycle trail and a four and a half mile equestrian trail through the corridor and up to nine miles of connections to neighborhoods, and existing and proposed trails along the route. The multi purpose trail follows the riparian corridor from trailheads in Swope Park to connections with the proposed Truman Road trail. It leaves the riparian corridor only in the northern segment, where corridor access is limited. The equestrian trail also begins in Swope Park, at the north end of an existing equestrian trail, and extends north to a trailhead south of Blue Banks Park.

#### Study Objectives:

The Swope Park to Truman Road trail will serve several purposes:

- Provide a non-polluting alternative means of transportation linking neighborhoods, recreation and employment destinations on the east side of the city.
- Extend existing trails in Swope Park, along Brush Creek and other areas, connecting areas of the city not currently connected by trails.
- Provide non-intrusive access and exposure to Byram's Ford battlefield historic site.
- Expand outdoor recreation, fitness and multi generational service opportunities.

Specific objectives of this planning effort include:

- The Swope to Truman trail concept plan is the first phase of implementation of a multi-use streamway corridor master plan for the Blue River linking existing and planned greenways (including the Brush Creek Corridor), trail systems (including the Riverfront Heritage Trail, Indian Creek Trail), destination nodes (including Swope Park, Byram's Ford Industrial Park and Historical Area) and the surrounding residential and business communities.
- Identification of a conceptual route for a bicycle/pedestrian pathway from Swope Park to Truman Road to serve as the basis of final design funded by the Missouri Department of Transportation (MoDOT) Federal Aid Project No. CMAQ-9900(412).
- Development of a Blue River trail system that connects residents to their work place, and provides recreational opportunities, thereby increasing usability and maximizing the benefits of the proposed trail system to the City, its constituents, and the overall metropolitan area.
- Identification of an achievable priority project and cost estimate.
- Implementation of the MetroGreen design guidelines for major elements of the corridor system.

The Swope to Truman trail concept was developed based on an analysis of the Blue River corridor, public workshop input, and discussion with the project steering committee, which included the following individuals representing the City, Corps of Engineers and Byram's Ford historic battlefield.

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Abbott, Steve; KCMO Park & Rec.  
Hines, Ray; Byrams, Blue Valley Association (BVA)  
Jacobs, Tom; Mid America Regional Council (MARC)  
Holm, John; US Corp of Engineers (COE), PM  
Jacoby, Karin; KCMO Public Works  
McDonald, Christopher; KCMO Public Works, PM  
Hoffman, Lynda; KCMO Public Works

This report documents the results of the analysis of opportunities and constraints determined by data evaluation, field reconnaissance, public input and Steering Committee review. Alternative routes were plotted on the available GIS data, and engineering plans for channel improvements. The final route is based on comparisons of land and construction cost, access to and visibility of the river, safety and optimal connectivity to trails and adjacent neighborhoods. The report identifies the trail route, by segment. It describes access, real estate control, cultural and environmental issues and connections to other trails and neighborhood areas that will guide final design and engineering. The report also includes general trail design standards, which comply with MARC guidelines and form the basis of the opinion of probable construction cost for the trail as shown. Maps illustrate the routing of each segment, as well as city and publicly owned properties. Design sections illustrate the conceptual design standards.

### **Trail Concept**

The multi purpose trail will provide access to and connections between several parks along the corridor, the Byram's Ford battlefield, and several areas of natural habitat. Where the trail passes Brownfield sites, the 20 foot wide maintenance right-of-way at the top of the improved bank allows room for the trail, with a degree of buffering. The equestrian trail can traverse both sides of the river south of Brush Creek, to allow a loop for riders. The west side leg will be constructed on the bench below the top-of-bank, and the east side leg will trace the top-of-bank, curving into wooded areas on public property.

For planning purposes, the trail is divided into nine segments of between one and one and a half miles each. Blue River crossings are limited to one at the Blue Parkway Bridge, and one at US 40. This routing allows connections to most neighborhoods and business areas, and each of the public parks along the river. It also provides access to underdeveloped public lands that have potential for recreational use. Generally several connections are possible in each of the nine segments. Trailhead locations are spaced to allow reasonable access throughout the length of the trail, where public property can accommodate secure off street parking and safe access.

In addition to river crossings, engineering challenges occur at some bridges, where clearance is restricted, or where the width of the bridge limits the area available for the trail to cross adjacent to traffic. Other challenges involve crossing of major drainage outfalls or tributaries, which require bridges or deflection of the path away from the Blue River to a narrower crossing point, or to land uphill from a headwall.

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Since a major portion of the trail length will follow the top of the channel improvements (twenty foot wide right-of-way), or public right-of-way, most of the land needed for the trail is already in public hands.

### General Trail Design Standards

#### Multi-purpose Trail

The trail should be multi-use, constructed to American Association of State Highway and Transportation Officials (AASHTO) standards. AASHTO standards call for a ten foot wide paved surface, with a two foot wide un-paved shoulder on either side, resulting in a fourteen foot wide cross-section. The pavement thickness should be three inches of asphalt over a crushed granular base. This section will be low maintenance and will provide adequate drainage at minimal cost. It will also be sufficient to support emergency vehicles.



**BIKE TRAIL**

The multi-use trail should follow closely the top-of-bank where possible. This will provide maximum views for the user and a safe horizontal and vertical alignment. This will also help to reduce construction costs. The proposed trail should only diverge from the top-of-bank for environmental, safety or aesthetic reasons. Portions of the proposed trail route traverse land that is currently in private ownership. If purchase or an easement is not possible, then the trail should be re-routed onto public streets or other public rights-of-way.

Connections (linkages) are shown to neighborhoods and to other proposed and existing trails. Linkages are generally on-street, and will consist of a striped designation for the trail. Linkages are used to cross the Blue River on existing bridges where this is practical.

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### Equestrian Trail

A conceptual plan for an equestrian trail is also included. The trail begins in Swope Park, where a trailhead may be developed. It then crosses under the 63rd Street bridge and follows the base of the 63rd Street highway embankment. It then runs north, weaving through the woods along Hardesty Road, to skirt the edge of the Byram's Ford Big Blue Battlefield historic district. Once north of the historic district, the trail crosses the Blue River on a proposed bridge designed to accommodate horses, bicycles and hikers. The equestrian trail then continues north along a bench in the upgraded channel, approximately one-third of the distance from the top of the west bank to the Blue River. This bench ranges from fifteen to twenty five feet wide.

The equestrian trail then continues north to an area south of Blue Banks Park, at the confluence of Brush Creek where a second trailhead may be established. The equestrian trail also crosses the Blue River at this point on a bridge that is proposed as part of the Blue Banks Avenue realignment project. A return loop can be developed along the east bank, heading south following the top-of-bank, until it intersects with the proposed crossing just north of Byram's Ford.



HORSE TRAIL

The equestrian trail is proposed to be constructed of wood chip mulch, mixed with a binding agent and then rolled. Use of the trail will further compact the mulch. The compacted mulch surface will be relatively low cost, and is a preferred riding surface for horses, as it does not damage their hooves. The compacted mulch also has a low environmental impact.

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### **Route Summary**

The preferred concept generally follows Concept A to a point just south of Blue Banks Park, where Blue Banks Road is proposed to extend across the river to connect with the realigned Coal Mine Road. The trail will then follow the east bank of the river north to the US 40 highway bridge, where it will cross back to the west side, and continue north under the 23rd Street Bridge. The trail will then move off the river following Winchester Avenue to a trailhead on the school property at Truman Road. The proposed Truman Road bike path will connect the trail to a trailhead on the east side of the Truman Road Bridge over the Blue River.

The discussion of each segment will include a description of segment starting and ending points, general routing, unique conditions, and access, real estate disposition, cultural and environmental issues and connections to neighborhood areas. Maps of each segment follow, along with a section of representative photographs.

### **Segment A**

The Swope to Truman Trail starts at Swope Park with two trailheads, one in the park west of the river, on a former park entry road (now closed) near the signal at Jackson Street. The east side trailhead is in the park, on the east side of Lewis Lane about 1000 feet south of 63rd Street.

Segment A consists of the trailheads and portions of the trail within Swope Park. Access to the trails is primarily at the trailheads. Secondary access will occur at the point where the trail crosses 63rd Street, connecting to the sidewalk on the south side and accessible from the city offices on the north side of the street.

Location of both the east and west trailheads would not conflict with potential improvements identified in the Swope Park master plan. The multi purpose trail within the park will be built entirely on developed upland, and will not involve environmental or cultural disturbance, but will provide over views into the riparian habitat. The equestrian trail will run through the riparian forest, on upland within the flood plain. Final routing and construction must be adjusted on site to minimize potential impacts to the existing habitat.

All of the land needed for the trail in Segment A is city owned park land within Swope Park. Proposed linkages to the trail from within the community can be provided within existing street right-of-ways. Opportunities for linkages exist from the Swope to Truman Trail to trails within Swope Park, and to the neighborhood immediately north of Swope Park. These linkages should consist of a crossing at the signal at Jackson Street, a striped bike path on existing streets, and should have signage designating the bike route.

There are no significant environmental concerns with this trail section. If designed properly, there should be very little tree removal, if any in Swope Park for the trailheads. Some soils within Swope Park have a moderate to high erosion potential. Care should be taken not to concentrate drainage of trail segments on the west slopes in Swope Park. Minimal soil disturbance should occur during construction of the segments in the park.

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**West Trailhead:** The west trailhead is near 63rd Street, at a curb cut entry into Swope Park. The trail route is graded for a roadbed, but there currently is not an existing road. Because this is not a vehicular entrance to the park, this location would have minimal conflicts between bicyclists and cars. The trailhead would occur at the end of the road leading to several shelters located just northwest of the Starlight Theatre. Where the road ends, the bike trail would continue north to 63rd Street via the graded roadbed.

This area is well suited for a trailhead because minimal grading would be required to put in a trailhead. Few trees would have to be removed. The trailhead parking should provide for a maximum of twenty parking spaces. This is the preferred option.

An alternative location for a trailhead was evaluated along the entrance to Swope Park, opposite the Kansas City Department of Parks and Recreation Building. A trailhead was rejected at this location, because the topography is steeper, and the area is wooded, necessitating more extensive grading and the removal of trees.

Two low cost options for the west trailhead exist. The first option would be to use one of the existing parking lots west of the Starlight Theatre, reserving space for trail users. This option has the advantage of low cost, requiring little additional grading and no tree removal. The disadvantage of this option is the potential for conflicts between trail users and theatre patrons. Conflicts should be limited, however, as there would be minimal overlap in times of trail use and theatre activities. Some of the existing parking lots are closed except for theatre events, so this policy would have to change. There is also a shortage of parking around the Starlight Theatre, but this should not be an issue, as overlap in uses would be limited. If it is decided not to construct separate parking for a trailhead, this is the preferred option.

The second low cost option would be to use a portion of the parking lots serving either the Kansas City Water Services Department or the Kansas City Department of Parks and Recreation. The biggest disadvantage of this option is that the trail will traverse the north edge of Swope Park and a trailhead at either of the Kansas City facilities would necessitate an additional crossing of 63rd Street. The trail is located at the north edge of Swope Park to facilitate access to park facilities, and to facilitate linkage to trails west of and within Swope Park.

**East Trailhead:** The east trailhead would provide access to the eastern half of Swope Park. It could use one of the existing parking lots serving the athletic fields along the Blue River. If it is determined that there is a shortage of parking in this area, there is sufficient room to expand an existing lot, or develop a new parking lot in this area, with minimal grading and tree removal.

From the east trailhead, the trail route extends west between two field complexes. It would then turn north along the upland edge of a bottomland forest area between the Blue River and the athletic fields. Once the trail reaches 63rd street, it would turn east and ramp up the road embankment to reach sidewalk level. Once it reaches street level at 63rd Street, the trail will switch back to the west and cross the Blue River using the existing walk on the south side of the 63rd Street bridge over the river. It then travels west along the north edge of Swope Park

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until it reaches the trail from the west trailhead at the traffic signal at 63rd Street and Manchester Parkway. Manchester Parkway is the main entrance into the Byram's Ford Industrial Park, and the historic battlefield site. This is a safe crossing point for 63rd Street.

There are pockets of wetland woods along the east bank of the Blue River in Swope Park. The wetland woods are interspersed within areas of bottomland forest, sometimes referred to as flat-woods. No tree removal should occur in these areas. The final location of the bike trail and the equestrian trail should be adjusted in the field to eliminate the need for tree removal. The cross-sections of the two trails are designed to result in minimal soil disturbance.

### **Segment B**

Once the trail crosses 63rd Street, it enters the Byram's Ford Industrial Park, but more importantly it enters the site of the Civil War Battle of the Big Blue at Byram's Ford. Portions of this site are on the National Register of Historic Places. Byram's Ford is identified as a Class A battlefield site by the National Park Service. As such it is afforded the highest level of significance for Civil War battlefields.

Between 59th Street and 58th Street, the U.S. Army Corps of Engineers is constructing a large grade control structure. This demarks the change from a relatively naturally flowing stream (upstream, south) to a channelized stream (downstream, north).

At 59th Street, a link is proposed to the adjacent neighborhood following 59th Street west from Manchester Parkway. This will provide a continuous loop of over 2 miles for neighborhood residents that consists of the Jackson Street link, 59th Street, the portion of the trail along Swope Park and the section along Manchester Parkway. The link identified has limited traffic and few curb cuts or driveways. This provides for a safer, more enjoyable ride. This loop will link residents with a regional trail system, activities within Swope Park, Byrams' Ford Battlefield, and potential jobs in the industrial park.

A conceptual plan for an equestrian trail also begins in Swope Park, where a trailhead may be developed. It then crosses under the 63<sup>rd</sup> Street Bridge and turns north on the east side of the river, weaving through the woods along Hardesty Road, to skirt the edge of the Big Blue Battlefield historic district. Once north of the historic district, the trail crosses the Blue River on a proposed new bridge designed to accommodate horses, bicycles and hikers. The preferred location for this bridge is at or near the location of the Grade Control Structure. The equestrian trail then continues north along a bench on the west side of the upgraded channel.

There is some potential for soil contamination from prior uses in the Byram's Ford Industrial Park. Soil contamination should not be a factor, as much of the trail is on surface streets or on areas already disturbed, such as the top of new channel alignment. There is the potential for cultural resource disturbance in the area of the battlefield. However, the trail can be built with minimal soil disturbance.

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On the east bank of the Blue River, much of the area where the equestrian trail occurs is part of the battlefield site. This area consists of primarily bottomland forest with pockets of wetland woods or palustrian forest. The trail should skirt all wetland areas. This will fulfill the requirement to avoid wetlands or minimize any impacts to wetlands, as required by the Clean Water Act, as amended. Weaving the trail between and around wetland areas will enhance the rider's experience, by exposing the rider to different environments and wildlife. No threatened or endangered species are noted for the area, nor were any observed during field investigations.

It may be possible for bicycle trail users to utilize some of the parking used by battlefield visitors. A future visitor's center is proposed for the Byram's Ford Battlefield site. When this is planned, consideration should be given to providing additional parking for use by bicyclists. A trail spur should also be provided from the visitor's center to the trail.

The majority of the bicycle trail will be on public right-of-way or within the twenty foot access easement/right-of-way along the top-of-bank for the Blue River channel improvements. The equestrian trail will pass through property owned by the City of Kansas City, but managed as part of the battlefield site by the Monnett Battle of Westport Fund, Inc.

Although much of the land on either side of the Blue River is now in the public domain, only two portions of the site are on the National Register. The Monnet Fund of Kansas City is working with the National Park Service and other agencies to preserve, restore and protect portions of the battlefield. Ultimately, a visitor's center is proposed for the site.

Because of its national significance, limited disturbance or development can occur at the battle site. Therefore, the proposed trail should stay as close to Manchester Parkway as possible. The trail is located on the east and south side of Manchester, since there are minimal curb cuts, reducing potential for conflicts between trail users and vehicles. On this side, the trail user is also exposed to some of the broad vistas of the battlefield, and has easy access to historic markers. After crossing 63rd Street, the trail wraps along the edge of the battlefield site, ultimately continuing north to 58th Street.

### **Segment C**

From 58th Street, the trail continues north along the west bank of the Blue River. Segment C extends to the south edge of the industrial development east of Manchester Parkway, just north of the point where the remnant oxbow crosses the road.

Because of the railroad to the west and river on the east, no access is possible from adjacent neighborhoods to the trail. However a greenway comprised of a wooded valley and remnant oxbow extends west from the Blue River several blocks to the rear of residences on the east side of Jackson Street. This is an excellent opportunity to provide connected woodland habitat linking upland, ravine and floodplain habitats broken only by the railroad which has culverts beneath for drainage and potential wildlife crossings.

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City owned land along the east side of the river provides a continuous wooded corridor ranging from 200 feet wide to over 700 feet wide from the top of the improved channel to either Hardesty Avenue or private residential property. This band of primarily upland habitat also provides continuous habitat linked (under the 63rd Street Bridge) to Swope Park, and with a cut along Hardesty Avenue to large wooded areas to the east. These two natural greenways are valuable assets to the regional habitat, and provide natural area frontage along roadways.

The channelized stream is part of flood control improvements that extend from the grade control structure to the confluence of the Blue River with the Missouri River. The grade control structure consists of a concrete weir followed by a series of rip-rap spillways and smaller rip-rap weir structures. The channel cross-section changes from a channel that is less than 100 feet wide (from top-of-bank to top-of-bank) in most locations to as much as 300 feet wide downstream of the grade control structure. The bottom channel profile downstream of the grade control structure is significantly lower than the river bottom upstream of the structure. It may be possible to use the grade control structure for a channel crossing of the Blue River. Coordination should occur between the final design of the trail with the final design and construction of the grade control structure.

Along the channelized portion of the Blue River, a twenty foot right-of-way runs parallel to the top-of-bank on either side allowing maintenance access. The City of Kansas City owns the channel from top-of-bank to top-of-bank with the twenty foot access beyond on either side. The trail along the west side of the Blue River should be located within the twenty foot wide access right-of-way and set back a minimum of six feet from the top-of-bank for safety considerations. This six foot setback can be used for tree planting along the trail. Tree planting may also occur on the other side of the trail. The banks of the channelized sections of the Blue River have been compacted to minimize erosion potential. The root structure of trees planted at the top-of-bank will help to stabilize the soils. During the growing season,



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trees help to “de-water” soil, reducing the potential for soil becoming over-saturated and slumping.

There are minimal soil considerations for this section of the trail. Most of the alignment will be at the top-of-bank, in areas that have previously been disturbed by construction activities. Soil contamination is not a factor in this segment, nor are cultural resources. Wetlands and threatened and endangered species are not a consideration for this trail segment because the trail will follow the maintenance right-of-way. No other unique or rare habitat occurs in this area.

### **Segment D**

The proposed trail route continues north through the west side access right-of-way at the top of the new embankment, following the new stream channel alignment. Segment D extends to just north of the Blue Parkway Bridge. Landscape, and/or fence buffering will be needed along the approximately 1,000 foot length of the trail that adjoins the industrial area. Space for a buffer will be limited.

The railroad to the west, and industrial development prevent access to the trail through Segment D, except for the sidewalks along Blue Parkway west of the bridge. These walks can be connected to the trail. The City of Kansas City controls the maintenance right-of-way along the top of the bank of the Blue River. No portion of the proposed multi-use trail in section D is outside of the right-of-way. On the east side, the equestrian trail can meander a short distance into city owned uplands.

A crossing under the existing Blue Parkway Bridge will be required at the northern end of this segment. The interface of the stream with the Blue Parkway Bridge poses challenges to the accommodation of a trail crossing. For this to occur, it may be necessary to construct a bench within the channelized section to accommodate the ten-foot wide trail and minimal vertical clearance with the bridge structure. A minimum of nine feet of vertical clearance is desired between the trail surface and the bottom of the bridge structure. When this bridge is re-built, it should be designed to better accommodate a bike trail.

There is the potential for some soil contamination to have occurred from adjacent industrial areas. However, since the trail occurs within the construction area of the realigned channel, any contaminated soils have been previously dealt with and should pose no threat to construction workers or to trail users. There are no wetlands in this area, and only remnant sections of habitat on the west side of the channel. On the east side of the channel, some wooded areas occur. This provides nice panoramic views of the river channel and the woods in the background.

After the trail crosses under Blue Parkway, a link extends west as a striped on-street path until it reaches the road level of the Blue Parkway. It then continues east on the north side of Blue Parkway, and crosses the Blue River on the bridge at this point. The Blue Parkway Bridge is of sufficient width to accommodate a trail. For safety purposes, a guard rail should be used at all bridge crossings to separate trail users from vehicles.

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Two bridges currently exist at the Blue Parkway crossing. The upper Blue Parkway Bridge is a four lane structure carrying a major East-West arterial road. The lower Blue Parkway Bridge is a two lane structure servicing local access needs. The upper bridge is to be replaced by a new 4-lane structure with construction expected to begin in late 2005. This new bridge has not been designed to accommodate the pedestrian walkway. However, future expansion of the bridge will include the walkway. The lower bridge will be removed prior to construction of the new upper bridge. A new bridge to replace the lower bridge is under consideration for a location downstream from the current bridge. However, no priority for replacement has been determined. The new alignment could create access issues for the surrounding industrial facilities.

### **Segment E**

Segment E continues north along the west side of the stream channel until reaching the confluence of Brush Creek. In the future, a new highway bridge is proposed to cross the Blue River just south of Brush Creek. This highway bridge will be part of the Manchester Road and Hardesty Avenue realignment. Until the new bridge is constructed, the Swope to Truman Trail should cross the Blue River using the existing Blue Parkway Bridge. Once on the east side of the Blue River, the trail utilizes on street striping until it joins the proposed alignment just south of and opposite the confluence with Brush Creek. Segment E alignment transitions from new stream channel alignment project area to existing channelized stream at north end of segment.

The Swope to Truman Trail continues north from the Blue Banks crossing (or Blue Parkway until the new river crossing is built) along the east bank of the Blue River. Segment E extends north to the confluence of Round Grove Creek on the east side of the river, north of the shooting range.

On the west bank, a trail link extends north around the existing industrial area into Blue Banks Park at the confluence of Brush Creek and the Blue River. A trailhead should be constructed at this point to allow access for both the Swope to Truman Trail and also proposed linkages to the Van Brunt Trail. A link extends west from Blue Banks Park to the existing trail and walkway system along the south bank of Brush Creek. Buffer planting should be installed for approximately 1400 feet to separate the trail from Blue Banks Avenue.

A trail bridge can be installed over Brush Creek, to allow access to City owned property on the north side of the creek that can then be incorporated into Blue Banks Park. From this crossing, a link can extend to Van Brunt Road, and the proposed Van Brunt Trail. In lieu of a separate trail bridge for pedestrian and bicycle use, the trail may cross Brush Creek at Elm Street. Because the Elm Street Bridge over Brush Creek is very narrow, the crossing should be at one side and protected by a guard rail.

Linking the Swope to Truman Trail to the Brush Creek and Van Brunt Trails provides access to the regional trail system, parks and attractions along the Brush Creek corridor including Country Club Plaza and the Nelson Gallery of Art. These vital connections will link businesses, institutions and neighborhoods to the Blue River corridor. The future river

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crossing south of Blue Banks Park will provide bicycle access for residents east of the river to the Brush Creek Corridor.

West of the Blue River, the trail does not continue past Blue Banks Park and Brush Creek. However, the linkages to other trail systems on the west side of the Blue River will ultimately provide several loops, using the Van Brunt Trails. Much of the land immediately adjacent to the west bank of the Blue River is owned by railroads. There are some very active tracks and rail yards in this area, and access and crossings would be difficult.

Much of the alignment of the east bank of the Blue River passes through public land or is within the twenty foot wide access and maintenance right-of-way on top-of-bank of the realigned channel. The City of Kansas City maintains ownership of the Blue River channel. In areas where the channel has been realigned, the City retains ownership of the former alignment. This allows a little flexibility in the final alignment of the Swope to Truman Trail. In those areas where the City owns additional property, the trail may diverge from the top-of-bank if there are interesting features that would enhance the experience of the riders. It will be necessary to obtain an easement or right-of-way from private property owners where the trail does not pass through City owned property.

Some of the former channel areas are starting to revegetate with native species, particularly where the channel has not been completely filled. These areas provide environmental benefits and can add visual interest for the trail user.

There is no indication of contaminated soil, or the presence of cultural resources along Segment E that would affect the alignment.

### **Segment F**

Segment F begins with the crossing of Round Grove Creek, the east bank of the Blue River, and continues around the great bend in the Blue River channel immediately south of the Leeds industrial complex. The trail continues between the river and industrial facilities, extending north to a point where the E 38<sup>th</sup> Street right-of-way would meet the river if extended west.

On the east side of the Blue River, additional public land allows more flexibility in the ultimate location of the trail. Where space is limited, the trail will generally be located within the twenty foot wide maintenance right-of-way at the top-of-bank of the Blue River. Security is a potential concern of some businesses along this stretch of trail. Adjacent property owners should be notified during design development of the trail, and if security is a concern, a fence should be design to help alleviate those concerns.

Most of the property on the east side of the Blue River is privately held by a variety of industrial businesses. However, the trail is confined to the twenty foot maintenance and access right-of-way adjacent to the top of channel. If unforeseen conditions require that the trail leave this corridor, then additional right-of-way must be obtained or appropriate easements negotiated. The trail will benefit from buffer planting along its east side for the majority of segment F, approximately 2,700 feet.

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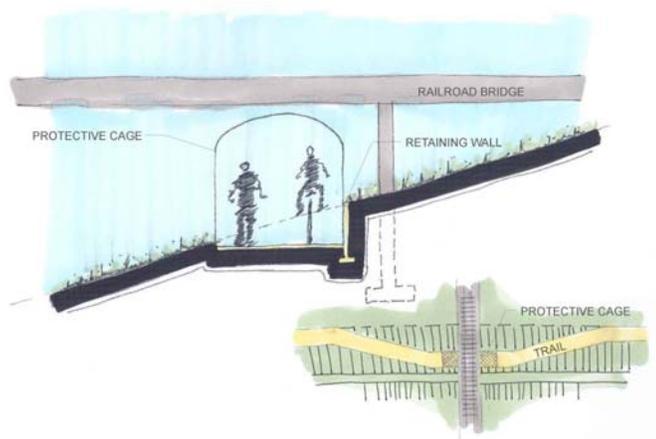
Several railroad tracks cross the Blue River along this stretch of trail. To get under these crossings, the trail should drop down into the channel and continue under the tracks on a bench. If there is no existing bench, it may be necessary to create one with a retaining wall. A safety railing should be provided on the downhill side, and a cover provided over the trail. If clearance is not sufficient, then the trail must be routed onto local streets and cross the tracks on at-grade crossing points before being routed back to the river. In any event, trail links marked on the street should be provided for access to businesses in the area.

Possible links occur at the south east end of the Leeds industrial complex, adjacent to a water treatment facility. Another link is possible on the south and west side of the Leeds industrial complex. These links would require negotiation of an easement or the purchase of right-of-way paralleling the railroad track to connect the trail to local roads. The east link would require approximately 300 to 400 feet of easement, and the west link would require approximately 800 to 1000 feet of easement. Both should be buffered by planting.

The east link would continue north of the water treatment facility to Stadium Drive (in Segment G) then head west as a striped lane to until it reaches the Blue River corridor. The west link can continue north and west on public roads through the industrial park until it reaches Stadium Drive. The links provide access to the industrial areas, for workers from nearby neighborhoods. The links also provide the opportunity for a looped trail for workers in the area to enjoy.

If right-of-way or easements cannot be obtained, or if there is difficulty in crossing under the railroad tracks as described, the alternative on-street route would be to follow Manchester Road north from the firing range area to Stadium Drive, then west to the Blue River.

There are no environmental concerns if the trail stays within the twenty foot maintenance and access right-of-way. There is slight potential for soil contamination for the easement sections



TRAIL UNDER RAILROAD BRIDGE

## **Blue River Greenway Master Plan Swope to Truman Trail**

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of the east and west links described above. There are no environmental concerns for any sections of the trail that are striped on local roads. There are no designated wetland areas, areas of unique vegetation or habitat nor any threatened or endangered species in this area. There are no known cultural resources that would be affected by construction of this trail segment.

### **Segment G**

The proposed trail alignment in Segment G continues north along the east embankment and crosses under Stadium Drive, on the east side of the Blue River. There is sufficient clearance at this point for the trail to cross under the road. Segment G ends on the north side of the US 40 bridge.

Just before reaching Stadium Drive, a trail link should extend east along the south side of Stadium Drive to the Missouri Department of Transportation (MoDOT) staging yard, where sufficient space exists for a trailhead. There is sufficient space for developing a trailhead with parking for ten to thirty vehicles. Use of this property would have to be negotiated with MoDOT. This trailhead is centrally located on the Swope to Truman Trail, and is also strategically placed for easy access to other proposed trails in the regional system

From the MoDOT property, the trail can also cross Stadium Drive at Beacon Street, and return to the Blue River north of Stadium Drive.

A trail link can extend westward along Stadium Drive, and cross the Blue River on the south side of the existing highway bridge. The trail can then continue along the south side of Stadium Drive to a trailhead in Liberty Park.

A link should also be established along Leeds Road to the Van Brunt Road Trails. It can also continue across Van Brunt into adjacent neighborhoods. These links will connect the Swope to Truman trail with the proposed Stadium Drive trail.

The trail continues north from Stadium Drive along the east side of the Blue River. It will be located within the twenty foot maintenance and access right-of-way. Although efforts are being made to remove or limit the automobile salvage yards that dominate the west side of the river, safety and security concerns are sufficient to warrant the trail being on the east side. Additional tree planting can be used along the west bank to screen the salvage yard and frame views.

There is sufficient clearance so the trail can cross under Interstate 70. It then continues north along the top bank of the river to Highway 40. At Highway 40, the trail can cross under the highway bridge, then turn immediately east until it reaches the highway level. Some additional right-of-way may be required or an access easement if there is insufficient width within the highway right-of-way.

Once the trail reaches highway grade, the trail can then switch back to the west and cross over the Blue River on the Highway 40 Bridge. The roadway shoulder at this point is seven to eight feet wide, and the bridge has a protected four foot wide asphalt path on either side. Signage should be posted requiring the rider to dismount and walk bikes across the bridge

## **Blue River Greenway Master Plan Swope to Truman Trail**

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(this is the case for all roadway bridges). It may be necessary to increase the size of the guard rail separating the path from highway traffic.

In Segment G, the Swope to Truman Trail will be almost completely within the twenty foot maintenance and access easement. Portions of the trail will be striped on local (City) roads. A portion will be on U.S. highway, and may require negotiation with the Federal Highway Administration for use of the highway shoulder and bridge.

There are no environmental concerns for this segment of the trail. There are some unique environmental features, including several cutoff oxbows remaining from the original Blue River channel. These can be attractive elements that add to the enjoyment of the trail user. Ultimately, these oxbows can be protected as wetland and habitat areas. There are no specific known cultural resource sites in this segment that would be impacted by the trail.

### **Segment H**

After crossing the Highway 40 bridge, a trailhead should be established. There are several options. The City owns property in the southwest quadrangle that would be sufficient for parking up to thirty cars. Access to this parcel would be through a business that currently markets block and stone, with a high volume of truck traffic. An alternative location would be on the north side of Highway 40. This area has limited traffic, the grades or less steep and access would be along a dead-end public road with limited traffic. Much of a trailhead in this area could be located within public right-of-way or City owned property. Some additional property may be needed, depending on the size of the parking lot.

Once across the Blue River the trail then drops down to the recommended trailhead site on City owned property on the north side of Highway 40 on the west bank of the Blue River. Placing a trailhead in this location will involve minimal conflicts with other uses, minimal vehicular conflicts and will not require riders to cross Highway 40 at grade.

The trail continues north from the trailhead along the west bank of the Blue River following relatively level ground through Blue Valley Park to 23rd Street, on the north boundary of the park. Another trailhead is located within Blue Valley Park near 23rd Street, with excellent access from the street and to links from the west.

The links follow internal park circulation from the southern portion of the park to a trail to the west along 27th Street. From 27th Street, another link follows the park road north through the park, to a surface crossing at the entrance to the park near the school. The surface crossing connects to the proposed 23rd Street bikeway and a link north through open land to Bennington Street and north across Truman Road. This connection also provides good neighborhood walking and bicycling access from all directions to the school.

Except for the southernmost portion of Segment H, the entire trail is on City owned or public property. The southernmost section is on portions of the former channel of the Blue River, however additional right-of-way or easement may be needed to skirt a storm sewer outfall structure in this location. About 600 feet of buffering is needed.

## **Blue River Greenway Master Plan Swope to Truman Trail**

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There are no hazardous material concerns in this trail segment. Within Blue Valley Park, are some wetland areas. The proposed alignment avoids these. The alignment within the park generally follows the maintenance right-of-way along the river. When the trail first enters the park from the south, it cuts through a wooded area. Care should be taken not to remove trees unnecessarily. Limited grading should also occur, in order to minimize erosion

### **Segment I**

The trail continues to the north, crossing under 23rd Street, and following the river to Corrington Park. There is adequate clearance for the trail to pass under the 23rd Street Bridge. A bench or terrace may need to be created for the trail, depending on slopes, and a guard rail will be needed on the down-slope side of the trail. North of the river, a link ascends the valley to connect with the surface crossing at 23rd Street near the school. This link offers the option of reaching the J.A. Rogers School without an at grade crossing of 23rd street.

Within Corrington Park is a trailhead on Bristol Avenue. The trail diverges from the river, turning north along Bristol Avenue up to 17th Street. At this intersection, the trail splits, extending both east and west along 17th Street.

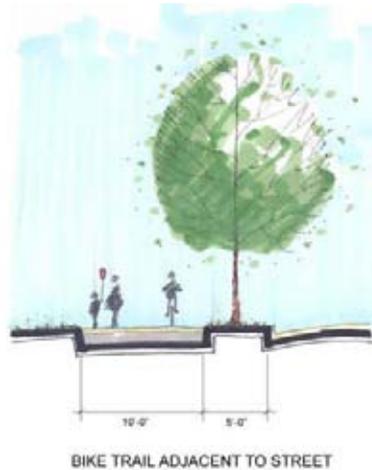
The eastbound trail crosses the Blue River on 17th Street to link to Manchester Highway, east of the Blue River. There is sufficient room for a four foot striped corridor on either side of the bridge. From this river crossing, the trail follows the east side of the river north to Truman Road where it terminates at a trailhead at the southeast corner of Manchester Highway and Truman Road, and a connection to the proposed Truman Road Trail. The trailhead site at Manchester Highway and Truman Road will accommodate ten to twenty parking spaces.

The westbound trail along 17th Street turns north onto Winchester Avenue, where it terminates at the proposed Truman Road Trail and the proposed trailhead located on the school property at the southwest corner of Winchester Avenue and Truman Road. There is sufficient pavement for development of a trailhead on school property. Consideration should be given to limiting on-street parking to one side of the road along Winchester Road. The east and west termini of the trail are also connected across the Truman Road bridge over the Blue River.

Because of physical constraints and limited space along the river, the trail on the west bank is almost entirely on City property or on street right-of ways. The on-street sections can consist of striping a bike lane, while along 17<sup>th</sup> Street, a separate trail parallel to the road is possible. The trailhead locations are all proposed for City owned property.

## Blue River Greenway Master Plan Swope to Truman Trail

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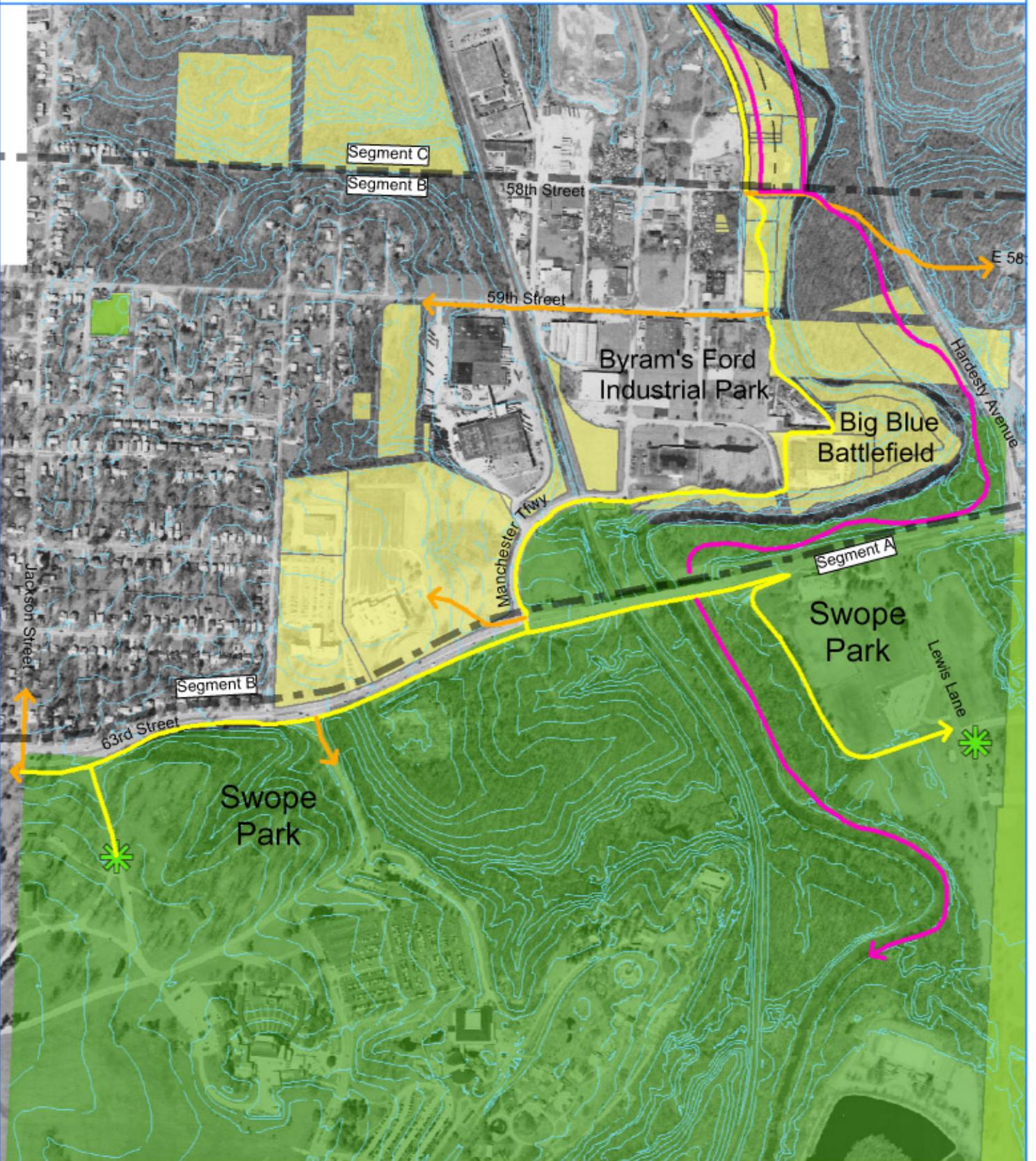
There are no environmental considerations for Segment I of the Swope to Truman Trail. Most of the on-street segments are through residential neighborhoods, with little chance for contamination. The rail facilities and salvage yards pose some hazard, but will not directly impact the trail. On the east side of the Blue River, prior to the Truman Road trailhead, the Centropolis Loop area poses some risk of contamination. However, most grading operations would be on areas where clean fill has already been placed. No unique habitat or threatened or endangered species are affected. No cultural resources will be affected.

## **Blue River Greenway Master Plan Swope to Truman Trail**

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### **Maps and Plans**

The following maps illustrate the route of the proposed multi-purpose trail, equestrian trail and connections to adjacent neighborhoods and trails. Base mapping is City of Kansas City, MO GIS mapping, supplemented by field reconnaissance, and design documents for the channel improvements.



**Blue River Greenway Legend**

**Swope to Truman Trail**

-  Preferred Bike/Ped Alignment
-  Equestrian Alignment
-  Linkages
-  Trailheads

**Public Land Ownership**

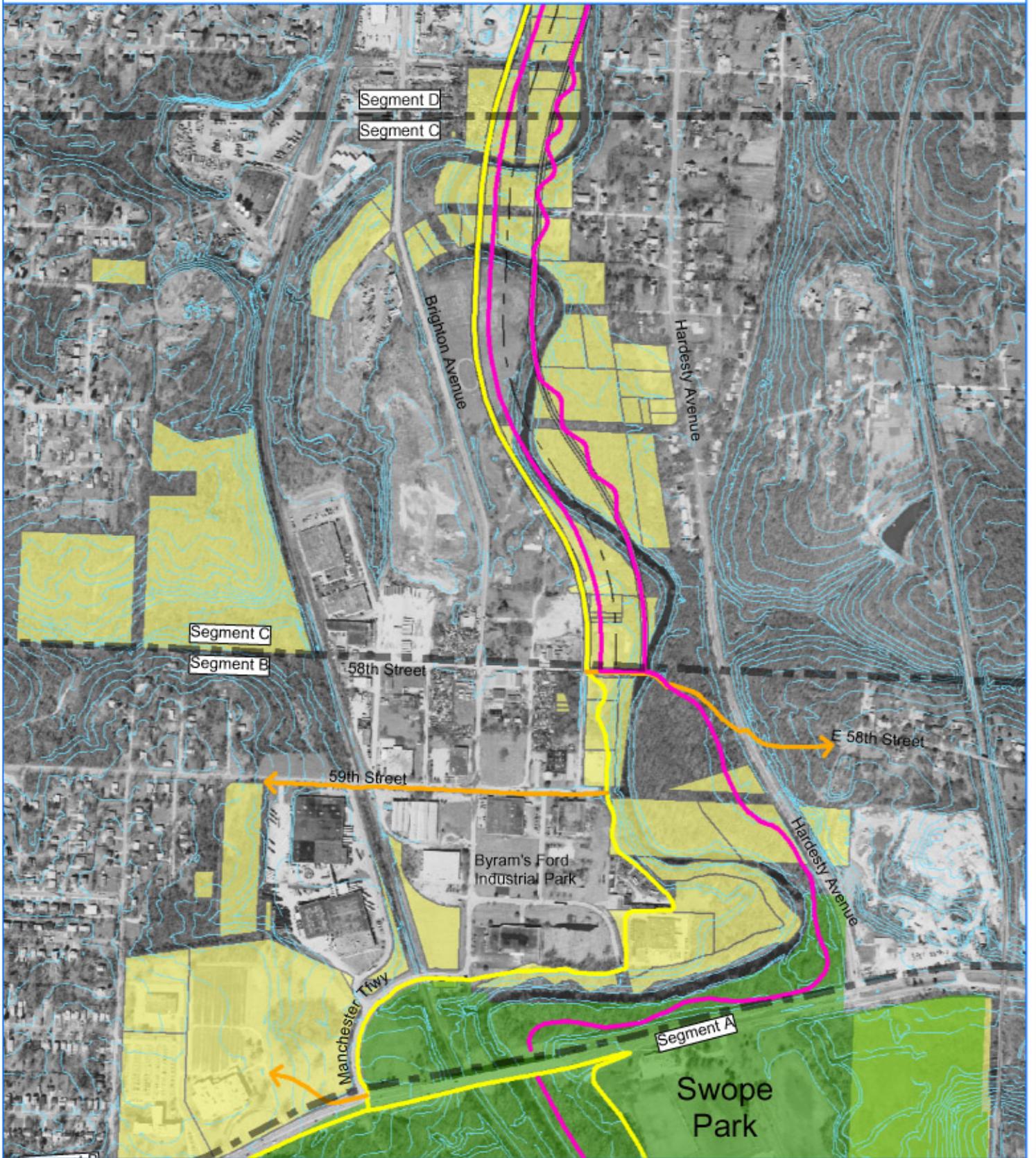
-  School Property
-  City of Kansas City
-  Park

**Channel Realignment**

-  Center Line
-  Top of Bank
-  Match Lines

**Segment A**





**Blue River Greenway Legend**

**Swope to Truman Trail**

-  Preferred Bike/Ped Alignment
-  Equestrian Alignment
-  Linkages
-  Trailheads

**Public Land Ownership**

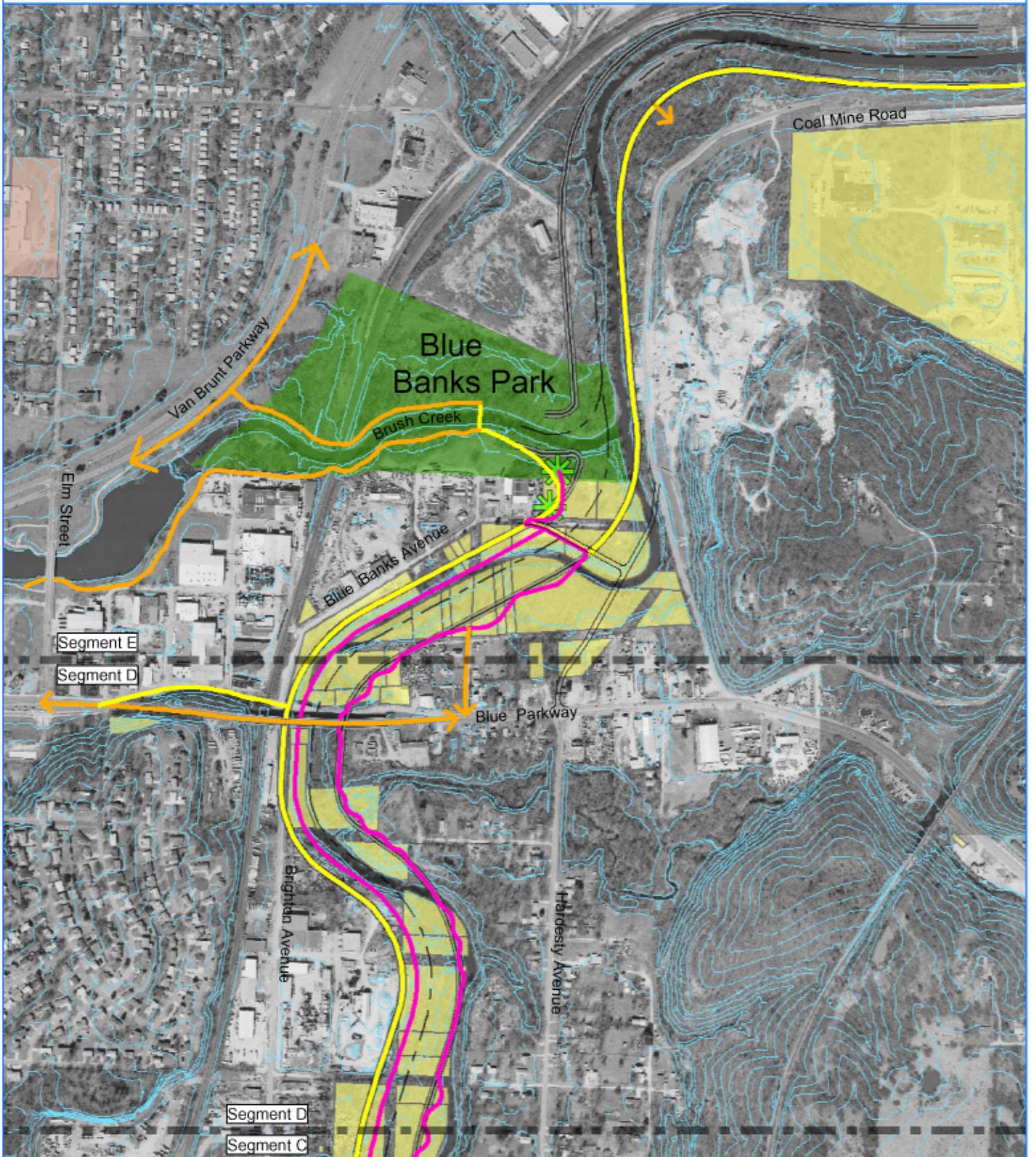
-  School Property
-  City of Kansas City
-  Park

**Channel Realignment**

-  Center Line
-  Top of Bank
-  Match Lines

**Segment B & C**





**Blue River Greenway Legend**

**Swope to Truman Trail**

-  Preferred Bike/Ped Alignment
-  Equestrian Alignment
-  Linkages
-  Trailheads

**Public Land Ownership**

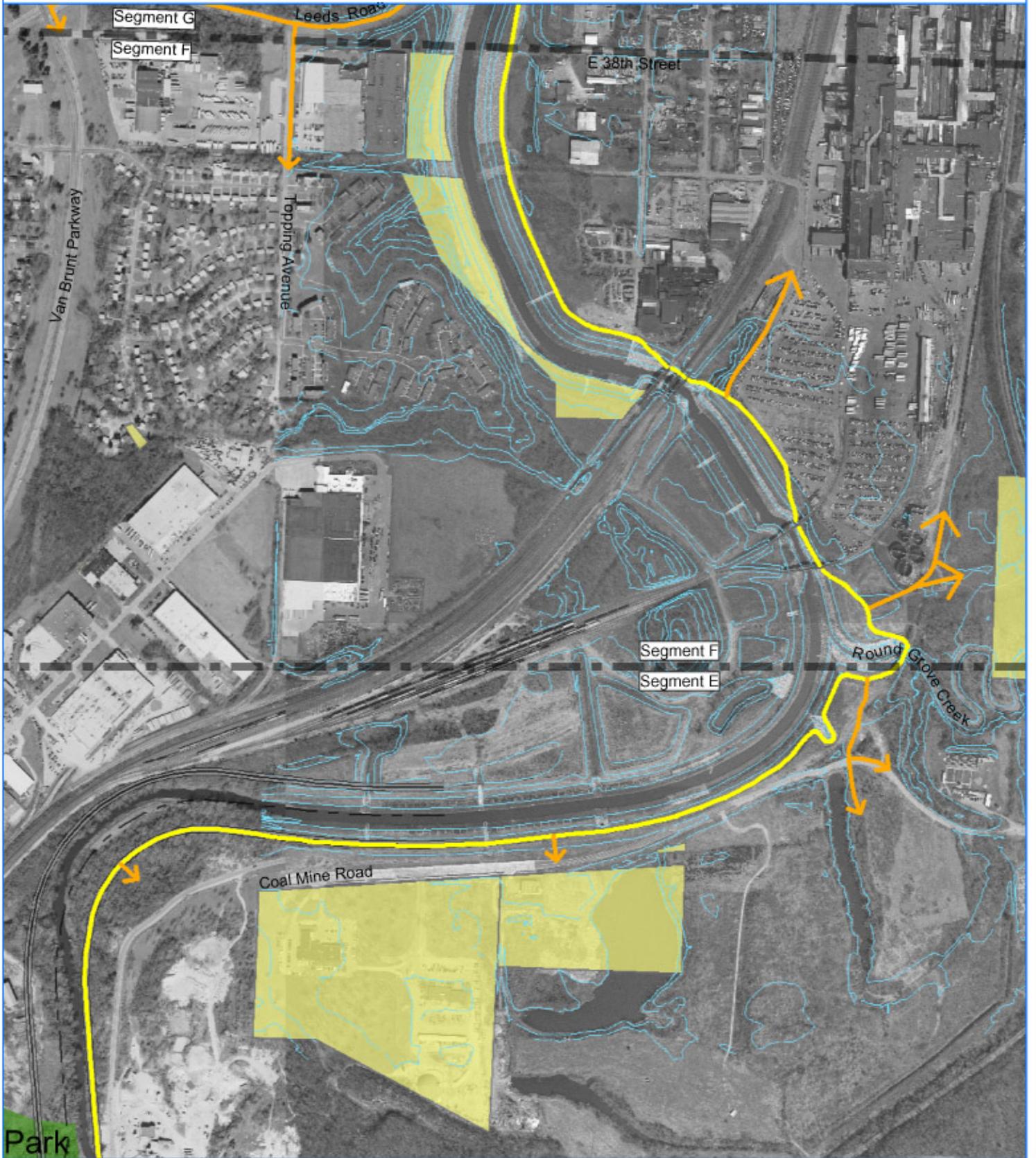
-  School Property
-  City of Kansas City
-  Park

**Channel Realignment**

-  Center Line
-  Top of Bank
-  Match Lines

**Segment D & E West**





**Blue River Greenway Legend**

**Swope to Truman Trail**

-  Preferred Bike/Ped Alignment
-  Equestrian Alignment
-  Linkages
-  Trailheads

**Public Land Ownership**

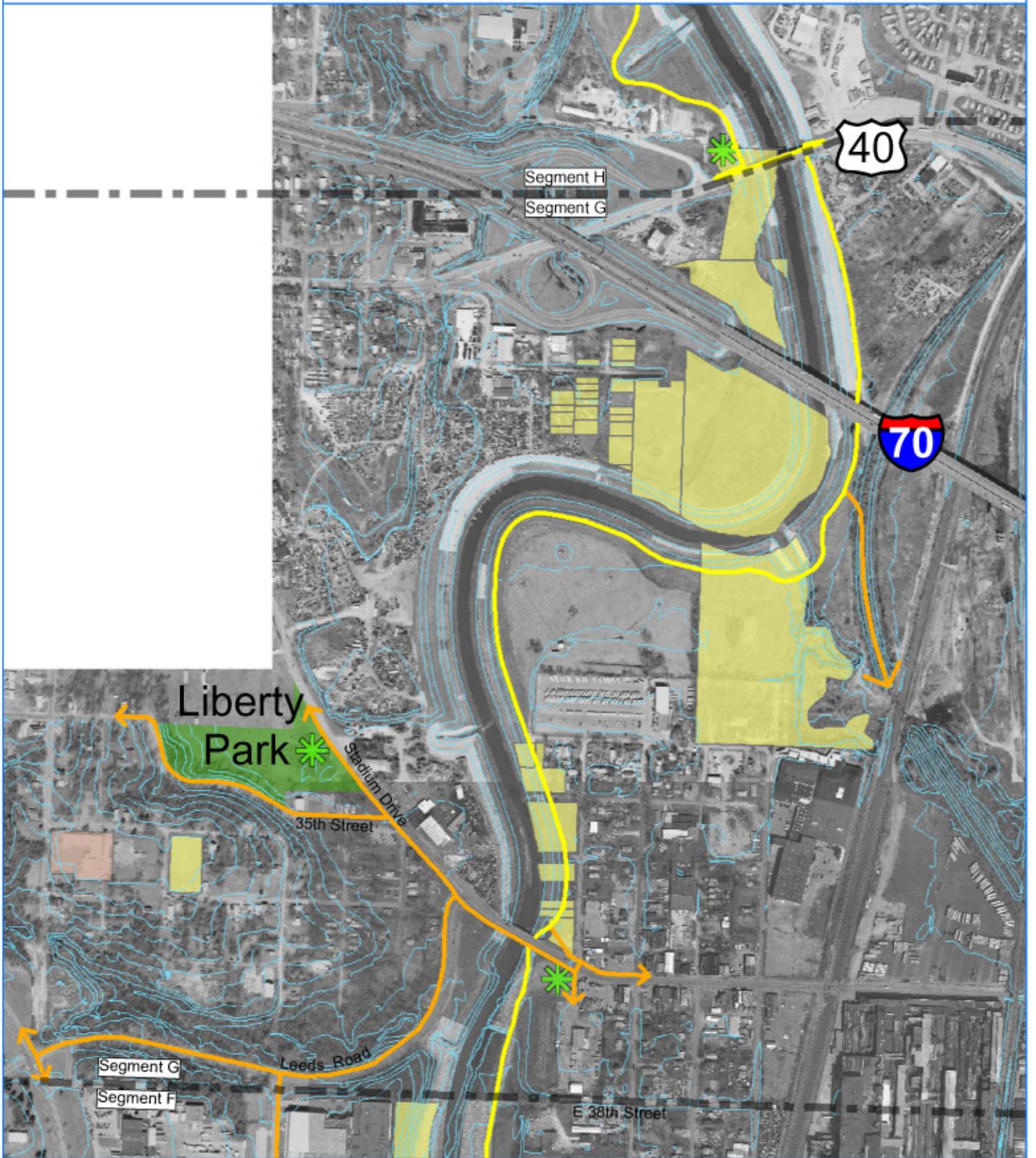
-  School Property
-  City of Kansas City
-  Park

**Channel Realignment**

-  Center Line
-  Top of Bank
-  Match Lines

**Segment E East & F**





**Blue River Greenway Legend**

**Swope to Truman Trail**

-  Preferred Bike/Ped Alignment
-  Equestrian Alignment
-  Linkages
-  Trailheads

**Public Land Ownership**

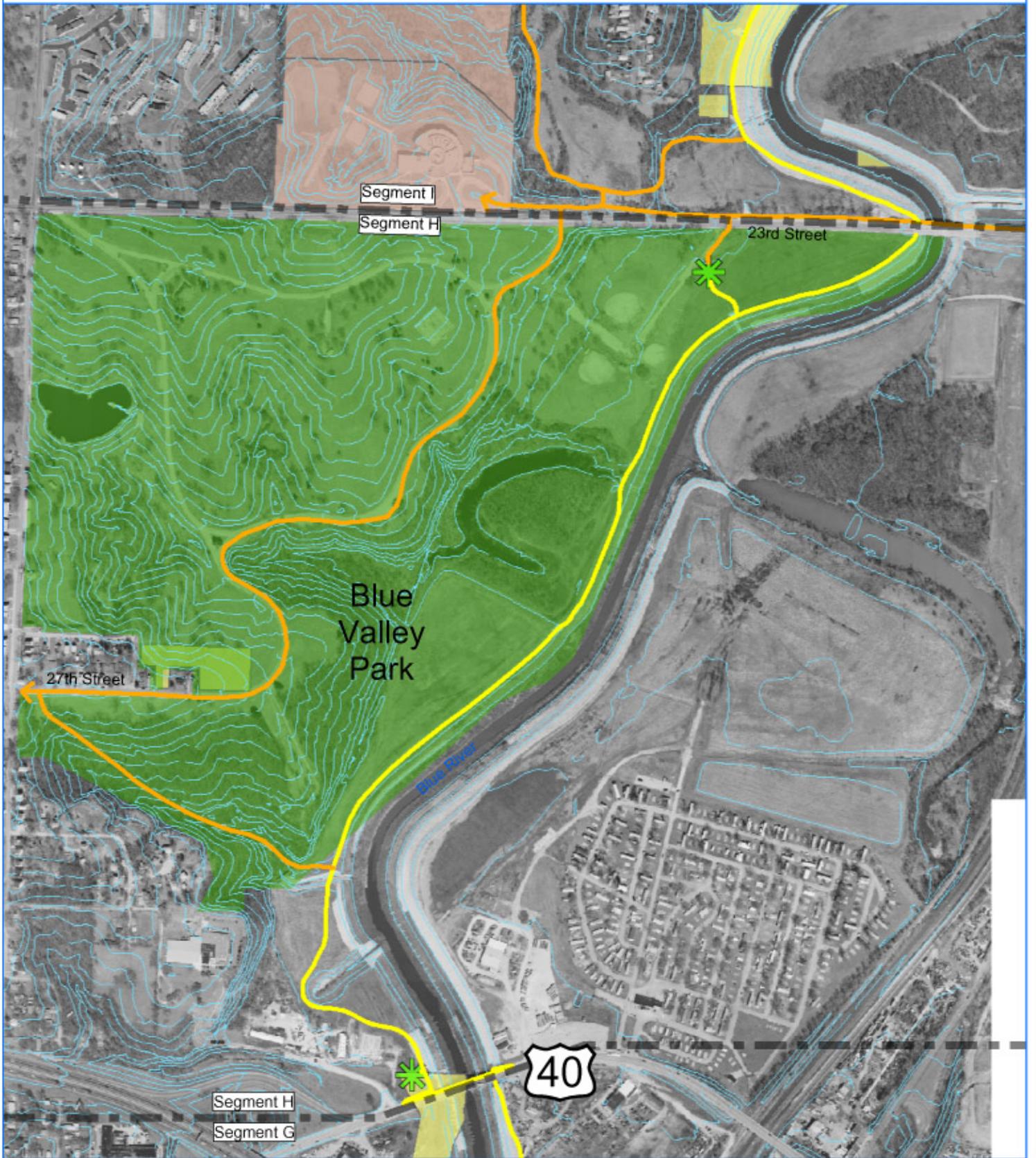
-  School Property
-  City of Kansas City
-  Park

**Channel Realignment**

-  Center Line
-  Top of Bank
-  Match Lines

**Segment G**





**Blue River Greenway Legend**

**Swope to Truman Trail**

-  Preferred Bike/Ped Alignment
-  Equestrian Alignment
-  Linkages
-  Trailheads

**Public Land Ownership**

-  School Property
-  City of Kansas City
-  Park

**Channel Realignment**

-  Center Line
-  Top of Bank
-  Match Lines

**Segment H**





**Blue River Greenway Legend**

**Swope to Truman Trail**

-  Preferred Bike/Ped Alignment
-  Equestrian Alignment
-  Linkages
-  Trailheads

**Public Land Ownership**

-  School Property
-  City of Kansas City
-  Park

**Channel Realignment**

-  Center Line
-  Top of Bank
-  Match Lines

**Segment I**



# Blue River Greenway Master Plan

## Swope to Truman Trail

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### Segment Photos

The following photos represent the dominant or representative conditions along each of the segments. Unique conditions are also noted.



**Segment A:** Crossing opportunity beneath 63<sup>rd</sup> Street looking southeast.

**Segment B:** Trail route follows the road to the Big Blue Battlefield site.



**Segment E:** Trail corridor looking east toward Municipal Farm, showing room for minimal meandering and buffer planting.

## Blue River Greenway Master Plan Swope to Truman Trail

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Segment E: Confluence of Brush Creek and Blue River showing top of bank right-of-way looking north.



Segment F: Open setting looking north showing the view from the trail at the Municipal Farm. This site affords some flexibility in alignment.



Segment F: Railroad bridge crossings have adequate clearance below.

## Blue River Greenway Master Plan Swope to Truman Trail

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Segment G: Crossing under Stadium Drive looking south, trail route is on the left (east) bank.



Segment G: View to northwest from trail corridor north of Stadium Drive.

Segment H: Blue Valley Park trailhead with 23<sup>rd</sup> Street Bridge in background.



## Blue River Greenway Master Plan Swope to Truman Trail

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**Segment I:** View of trail corridor looking south from Carrington Park.



**Segment I:** Trail corridor looking north to Truman Road at Centropolis loop.

**Segment I:** Trail corridor looking south to 17<sup>th</sup> Street Bridge at Centropolis loop. Showing room for buffer plantings on the east side of the trail.



# Blue River Greenway Master Plan

## Swope to Truman Trail

### Cost Opinion

The Swope Park to Truman Road Concept Plan is conceptual in nature, therefore the cost opinion which follows is a conceptual order of magnitude opinion suitable for budget development. It includes a contingency to allow for conditions uncovered by detailed site investigations and refinements of scope and level of finishes of the final design. The cost opinion also includes an allowance for the fees generally required to design and permit the improvements.

ITEM	QTY	NAME	UNIT	MATERIAL	LABOR	TOTAL COST	Extended Cost
1	59,445	Preferred Concept Trail	LF	\$25.00	\$25.00	\$50.00	\$2,972,250.00
2	23,044	Equestrian Trail	LF	\$3.00	\$3.50	\$6.50	\$149,786.00
3	31,700	Standard Links	LF	\$3.00	\$2.00	\$5.00	\$158,500.00
4	7,250	Blue Valley Park Link	LF	\$25.00	\$25.00	\$50.00	\$362,500.00
5	4,285	Leeds Road Link	LF	\$25.00	\$25.00	\$50.00	\$214,250.00
6	5,525	Blue Banks Park Link	LF	\$25.00	\$25.00	\$50.00	\$276,250.00
7	2	Bridges	EA	\$50,000.00	\$50,000.00	\$100,000.00	\$200,000.00
8	37	At-grade Road Crossings	EA	\$8,000.00	\$5,000.00	\$13,000.00	\$481,000.00
9	2	At-grade Rail Crossings	EA	\$12,500.00	\$7,500.00	\$20,000.00	\$40,000.00
10	11	Bicycle Trailhead	EA	\$29,800.00	\$31,000.00	\$60,800.00	\$668,800.00
11	1	Equestrian Trailhead	EA	\$30,500.00	\$31,450.00	\$61,950.00	\$61,950.00
12	6100	Buffer Strips	LF	\$8.50	\$11.50	\$20.00	\$122,000.00

\$5,707,286.00

\$5,707,286.00

<b>ESTIMATE SUMMARY</b>	<b><u>Low Range</u></b>	<b><u>Mid Range</u></b>	<b><u>High Range</u></b>
	\$4,565,828.80	\$5,707,286.00	\$6,848,743.20
	\$4,565,828.80	\$5,707,286.00	\$6,848,743.20
	\$228,291.44	\$285,364.30	\$342,437.16
	\$684,874.32	\$856,092.90	\$1,027,311.48
	\$5,478,994.56	\$6,848,743.20	\$8,218,491.84

Cost opinion includes an average of one bench, sign, trash receptacle, catch basin, and 50 LF of drain pipe per 1000 LF of paved trail.

Cost opinion assumes 14 foot wide profile with 10 feet of pavement per AASHTO standards.

Cost opinion includes an average of 40 trees per 1000 LF of paved trail.

Cost opinion assumes 850 CY of earthwork per 1000 LF, or 1.5 feet per foot.

Cost opinion assumes 3 IN of asphalt over 5 IN of gravel for pavement profile.

Cost opinion for on-street connections includes pavement striping, tree-planting and signage.

## **Blue River Greenway Master Plan Swope to Truman Trail**

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Cost opinion does not include cost to purchase land not yet public. (31,779 LF on private land).

Cost opinion for the equestrian trail includes rolling and mulching, and one sign per 1000 LF.

Cost opinion quantities for each bicycle trailhead include an asphalt 20 stall parking lot, a restroom, a picnic shelter with a table, a trash receptacle, and a trail sign.

Cost opinion quantities for each equestrian trailhead include an asphalt 20 stall parking lot, a restroom, a picnic shelter with a table, a water trough, a trash receptacle, and a trail sign.